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W 11b

CD-0006-17 (Corps of Engineers)

January 25, 2018

EXHIBITS

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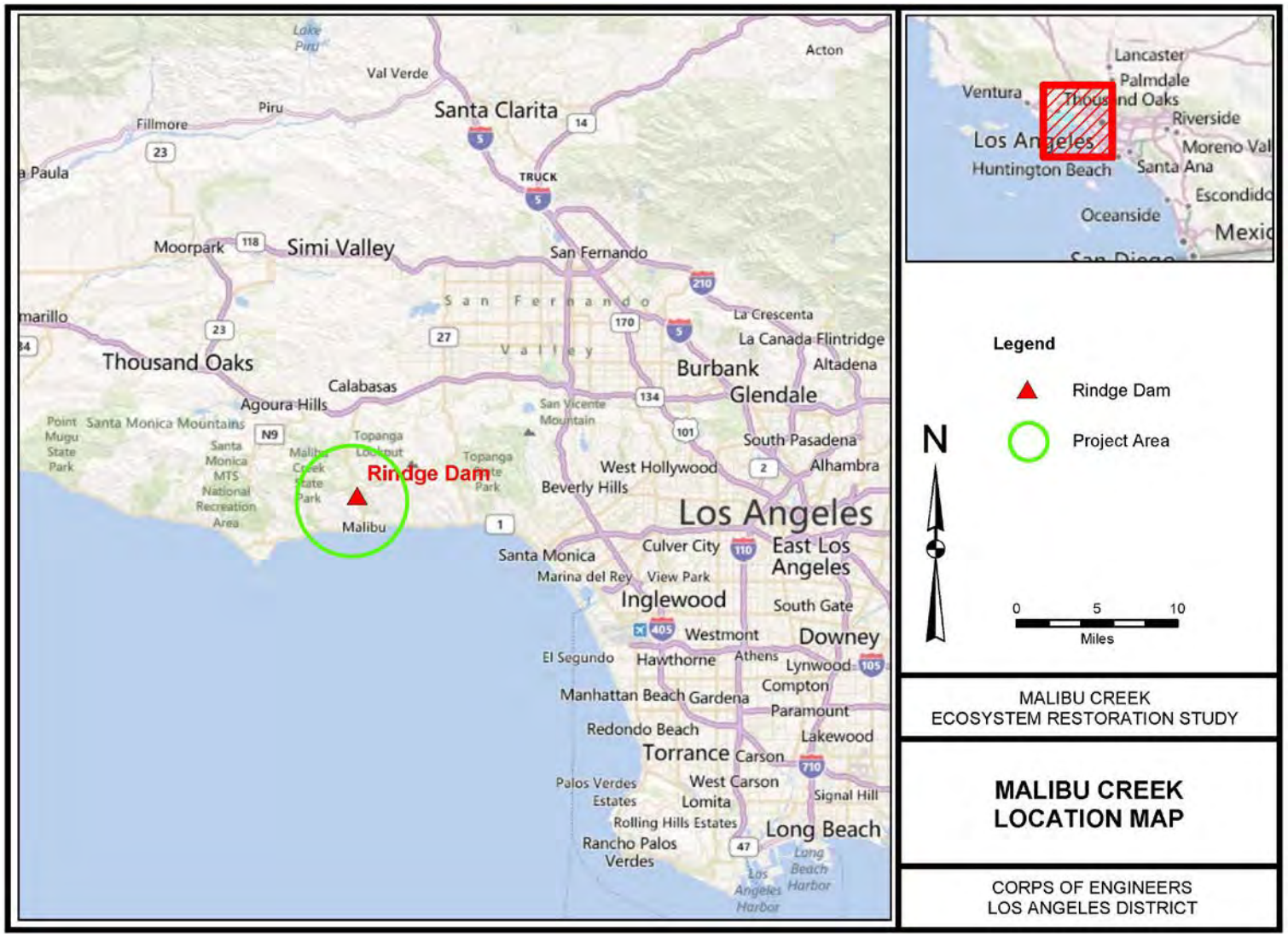

Plate 9.1-1 Malibu Creek Location Map

Exhibit 1
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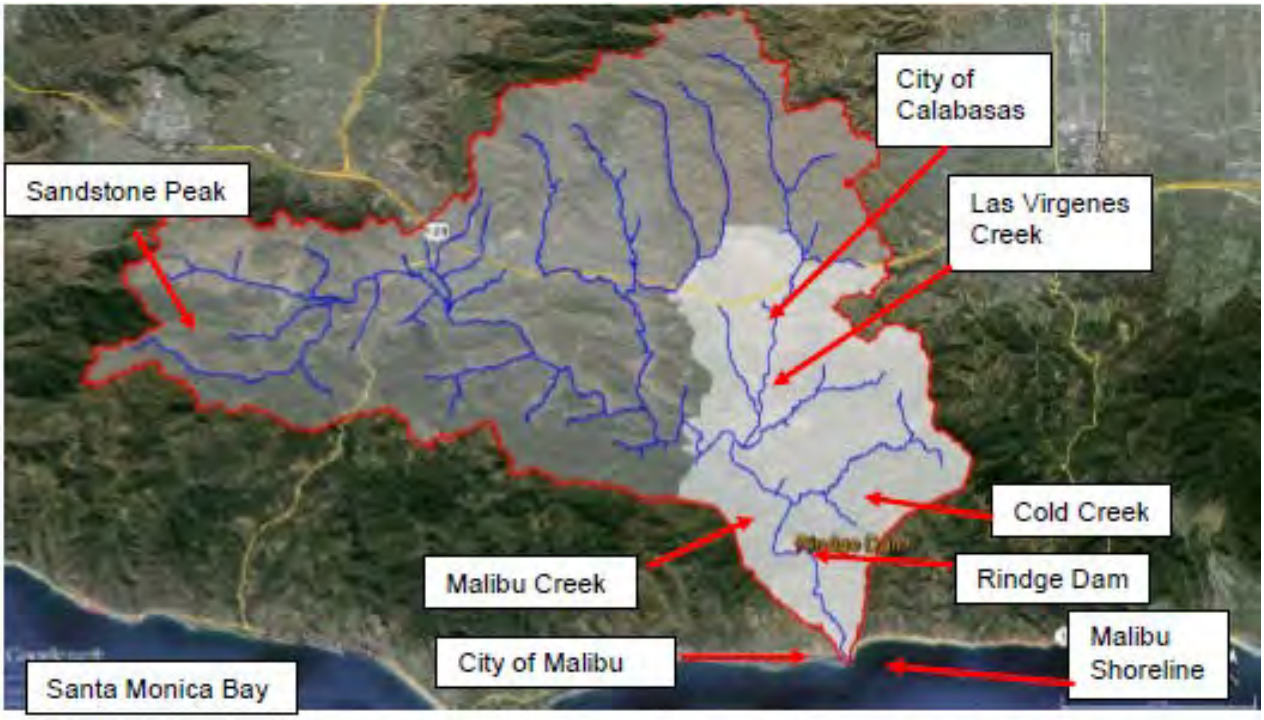

Figure 1.9-1 Malibu Creek Watershed Study Area and Project Area (Shaded)

Exhibit 2
CD-0006-17

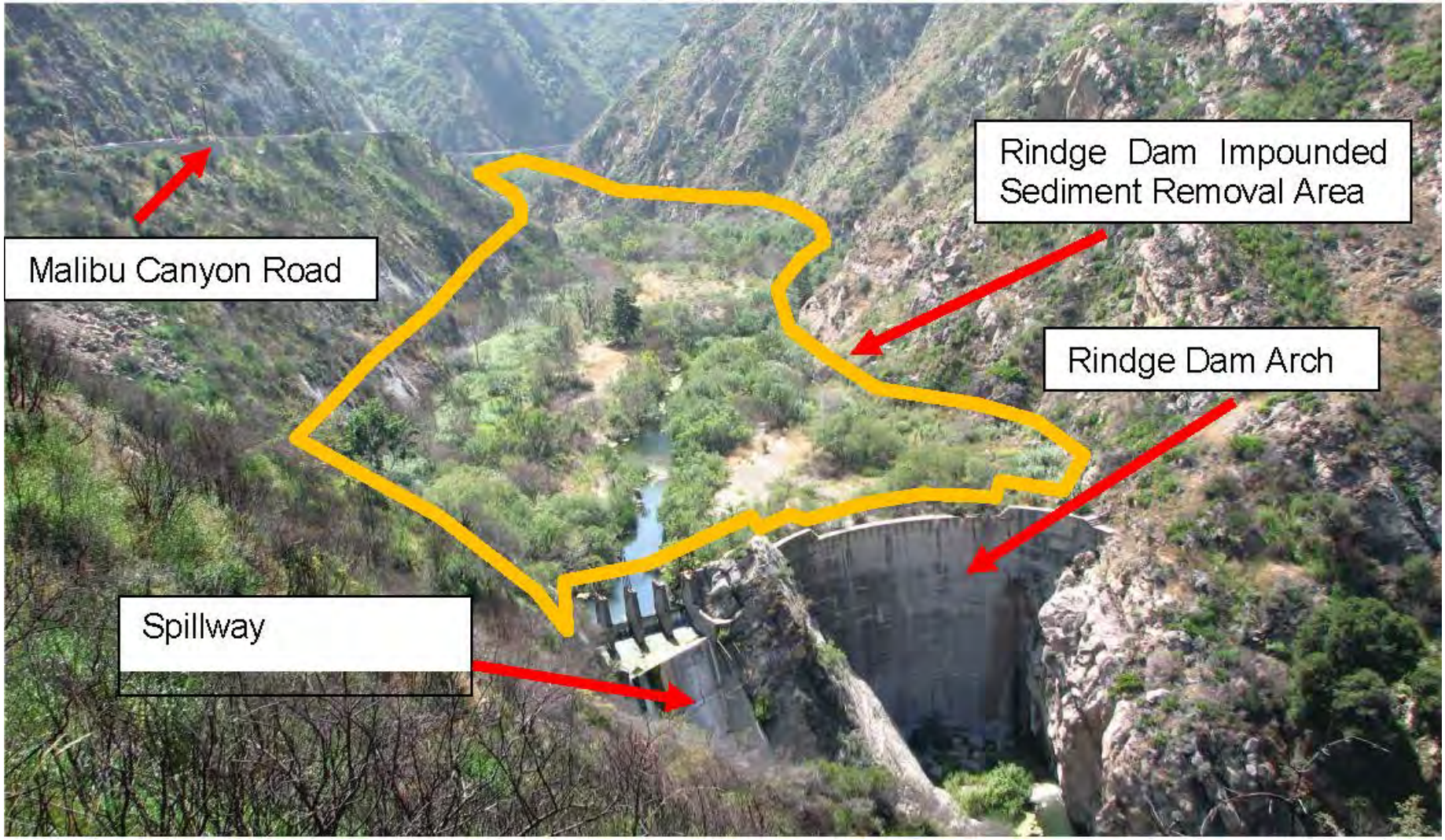

Figure 2 Extent of Rindge Dam Impounded Sediment

Exhibit 3
CD-0006-17

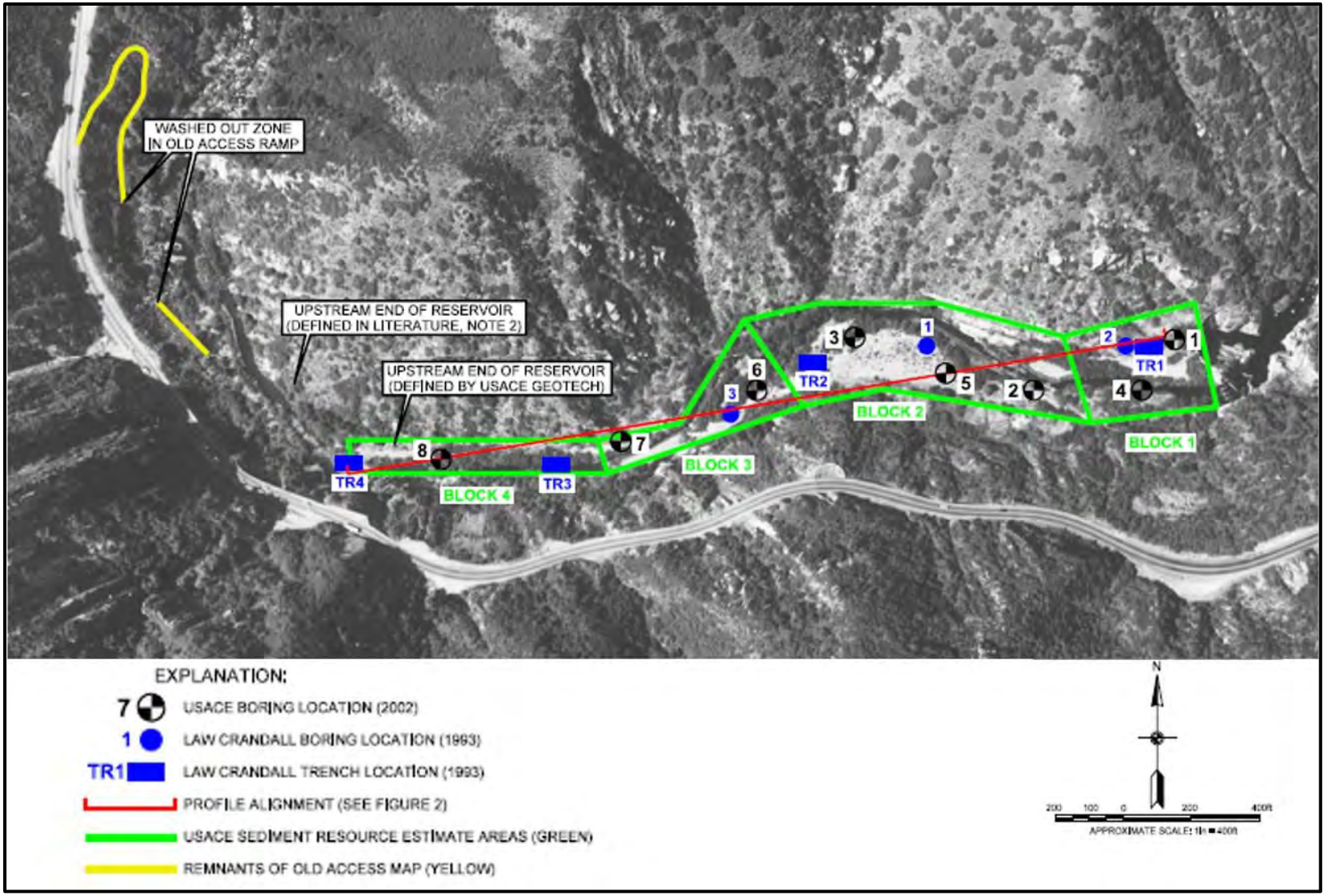

Figure 3.2-3 Extent of Rindge Dam Impounded Sediment

Exhibit 4
CD-0006-17

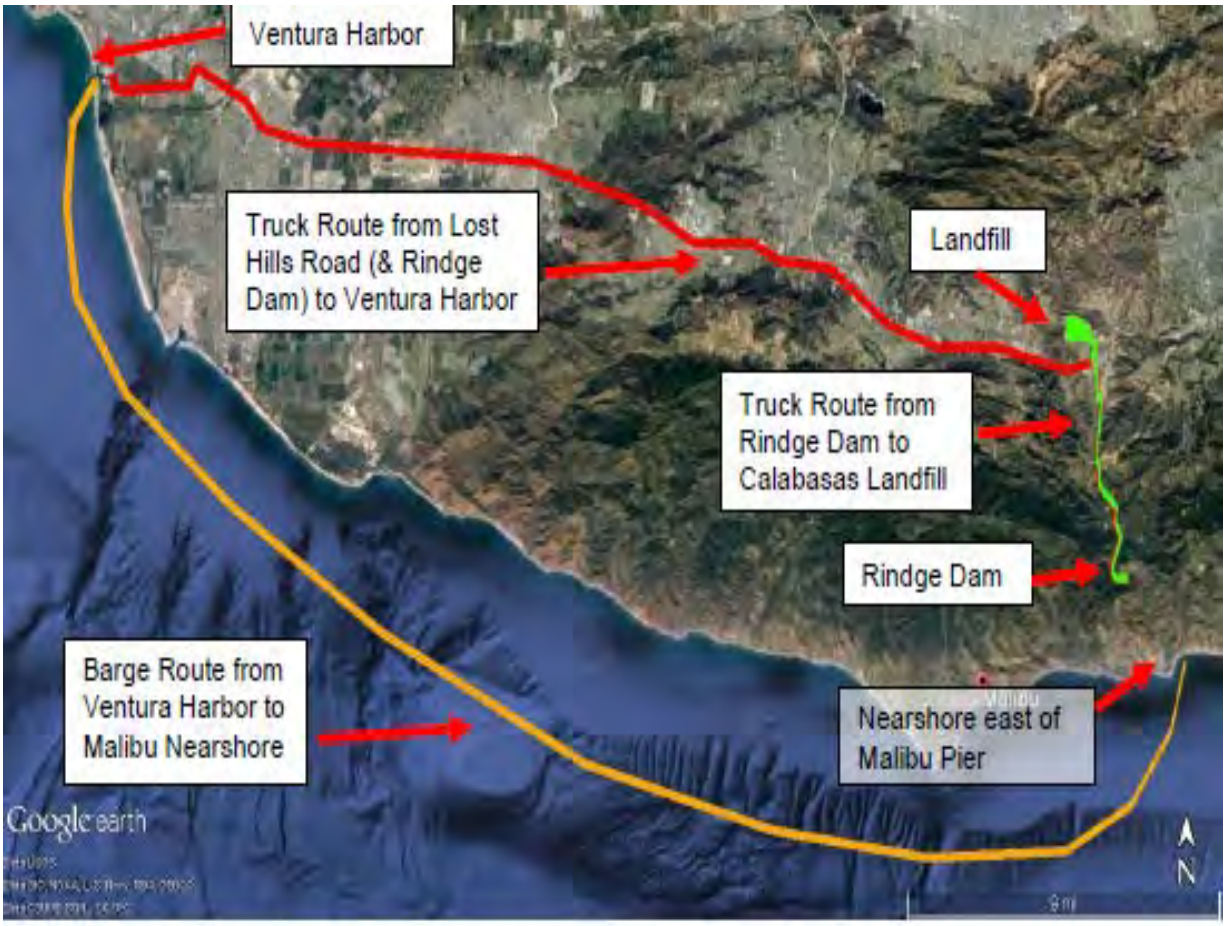

Figure 1.8-1 - Likely LPP Truck to Barge

Exhibit 5
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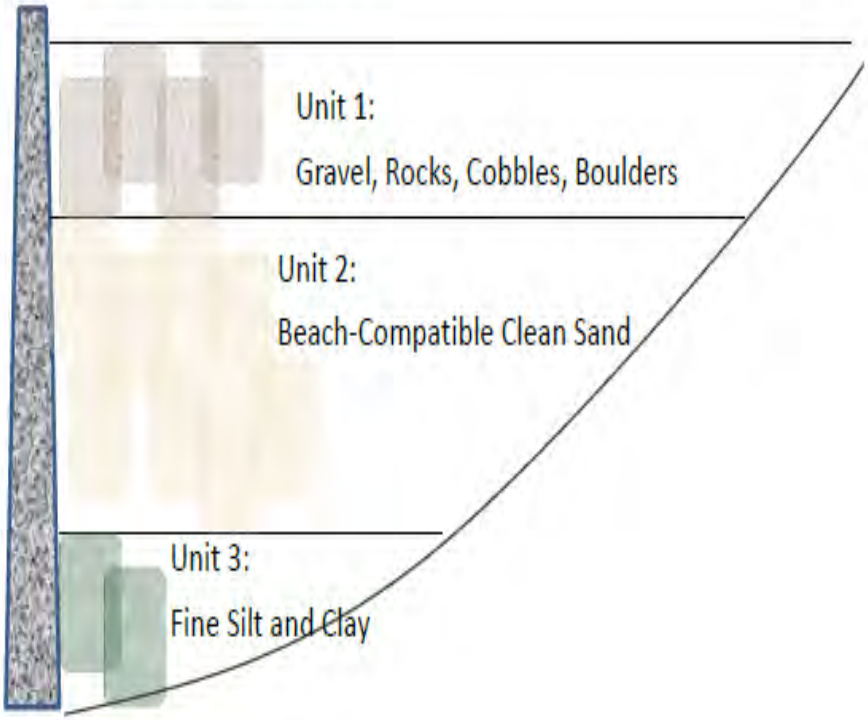
Figure 4: Layers of Impounded Sediment



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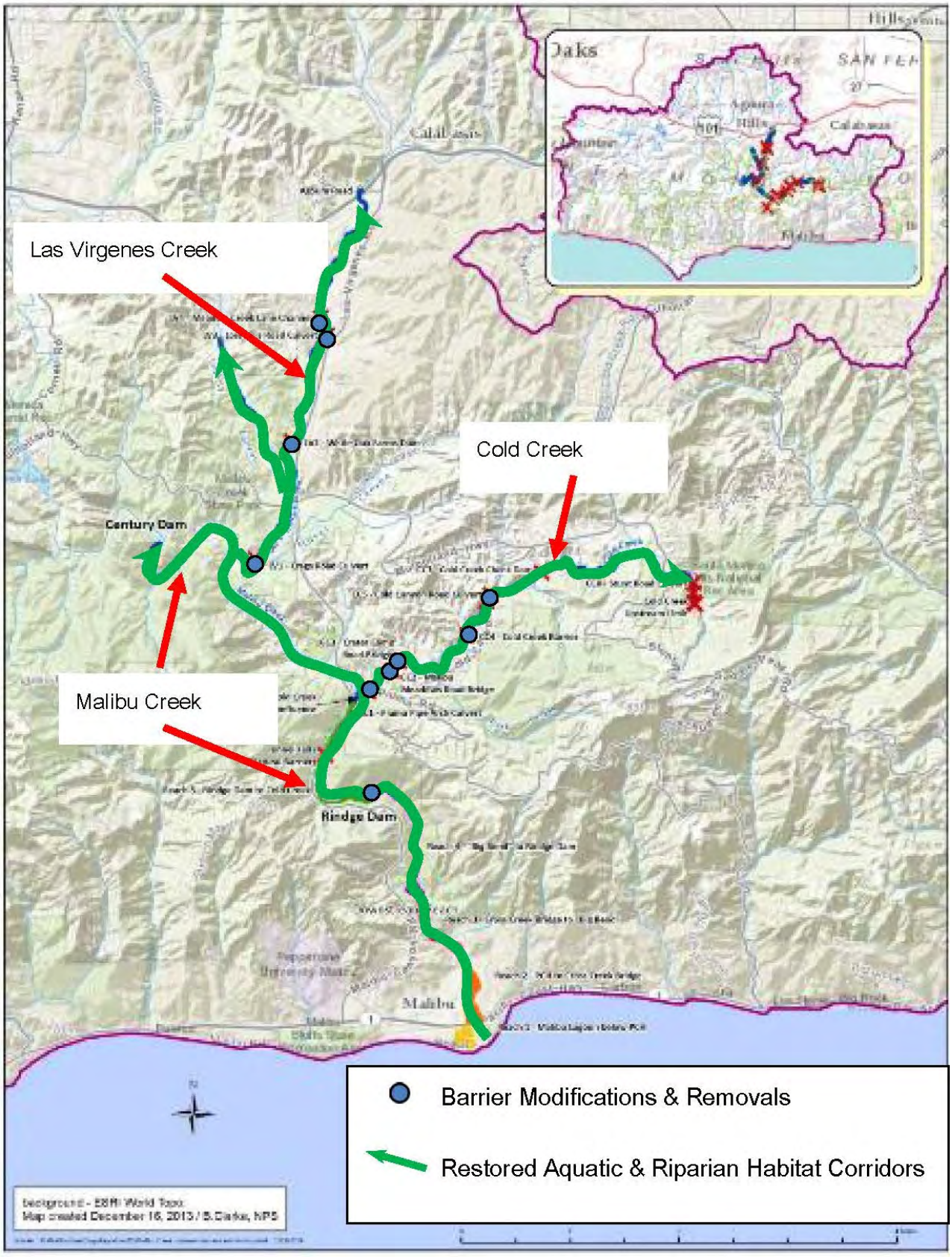

Figure 4 Restored Aquatic Habitat Connectivity - Upstream Barriers

Exhibit 7
CD-0006-17

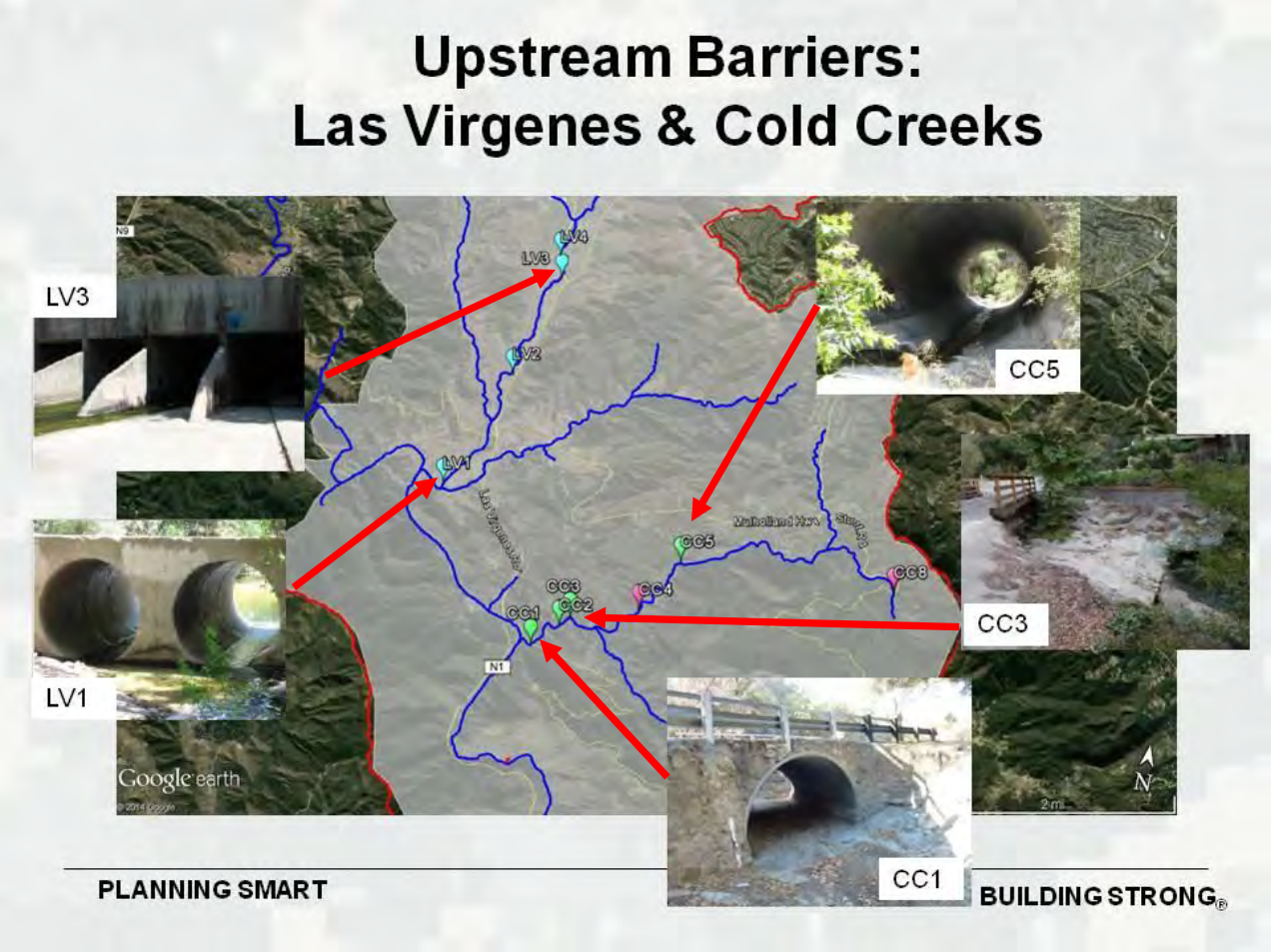

Figure 4.4-13 - Upstream Barriers

Exhibit 8
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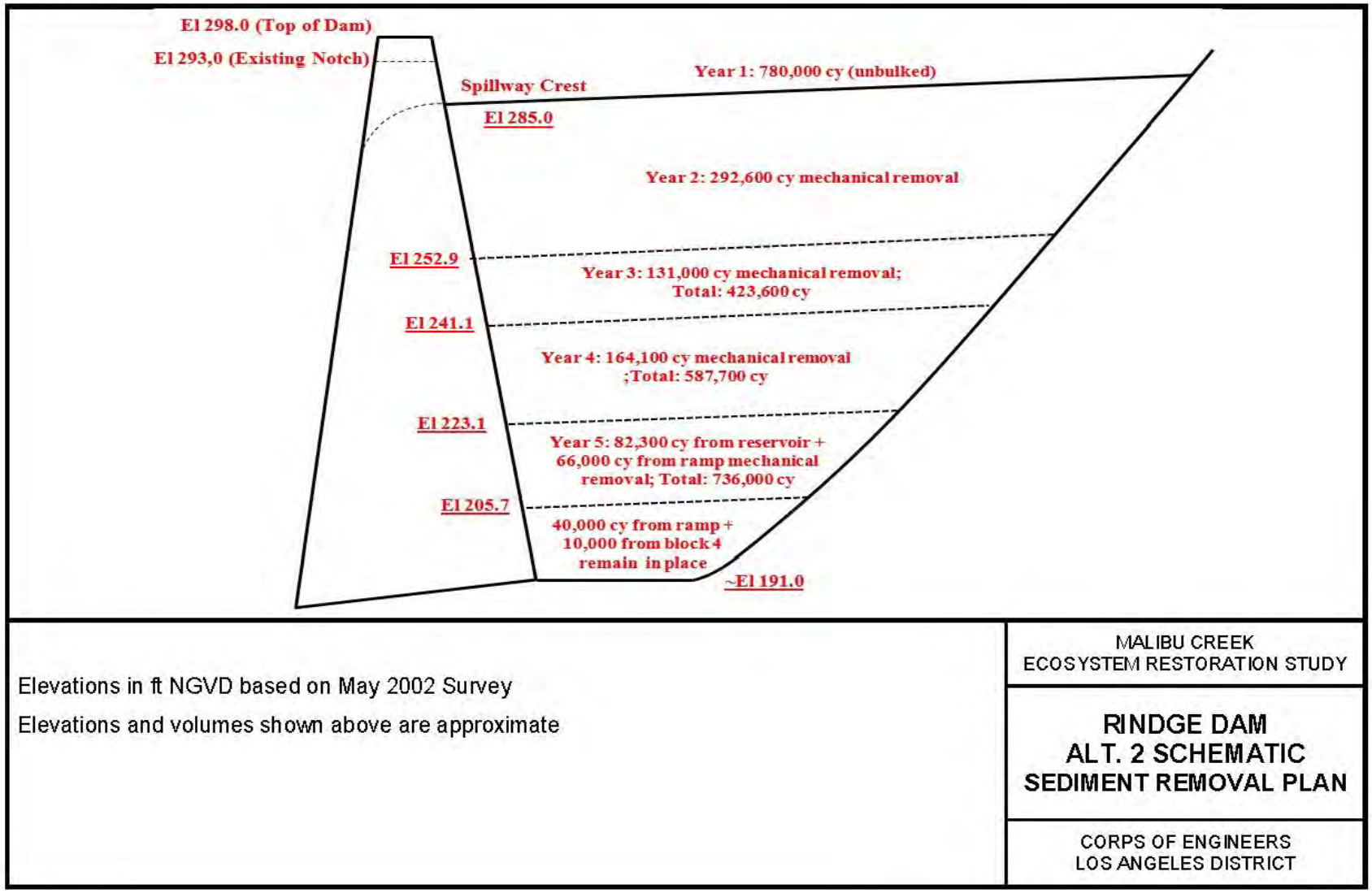

Plate 16.3-1 Rindge Dam - Alt. 2 Schematic Sediment Removal Plan

Exhibit 9
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Table 4.4-2 - Summary Description of the Focused Array of Alternatives

	Alternative 1	Alternative 2a Alternative 2c	Alternative 2b Alternative 2d	Alternative 3a Alternative 3c	Alternative 3b Alternative 3d	Alternative 4a Alternative 4c	Alternative 4b Alternative 4d
Description	No Action	Rindge Dam Arch Removal Mechanical Transport	Rindge Dam Arch Removal Mechanical Transport Upstream Barriers	Rindge Dam Arch Removal Natural Sediment Transport	Rindge Dam Arch Removal Natural Sediment Transport Upstream Barriers	Rindge Dam Arch Removal Mechanical Transport and Natural Sediment Transport	Rindge Dam Removal Mechanical Natural Sediment Transport Upstream Barriers
Alt. Summary	Rindge Dam 100-foot high arch (and spillway) would remain in-place without modification. Age of structure may be an integrity issue. Impounded sediment behind Rindge Dam to remain with some temporary deposition between storms. Risk of downstream flooding increases over time due to aggrading channel. Reach below Rindge Dam will degrade 5 to 10 feet reaching equilibrium in about 100 yrs. Approx 2 ft of deposition likely to occur in lower reaches below the Dam. Costs may be incurred to maintain dam safety and provide flood risk mgmt measures in downstream areas.	Remove Rindge Dam arch over 7-8 years while removing impounded sediment to minimize downstream adverse impacts to habitat and flood risk. Truck all 780k CY of impounded sediment to Calabasas Landfill or to shoreline/ nearshore site(s). Screen boulders and cobbles from sand delivered to the shoreline. Opens up about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 2c:** Adds spillway removal to Alt 2a features while removing arch to lessen habitat disturbance, improve safety, and aesthetic purposes. 2a1, 2c1: shoreline placement 2a2, 2c2: nearshore placement	Same as 2a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up a total of about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 2d**: Adds spillway removal to Alt 2b features. 2b1, 2d1: shoreline placement 2b2, 2d2: nearshore placement	Incrementally remove Rindge Dam arch over decades (20-100 yrs) in 5 foot lifts, waiting for impounded sediment to be naturally transported downstream with winter storm flows, repeating until structure is completely removed. Assumed timeframe for removal: 40-100 yrs. No need for trucks to transport sediment to Calabasas Landfill or beaches. Trucks needed to transport dam/ spillway concrete to landfill. Floodwalls required for increased flood risk to Serra Retreat & City of Malibu: 10 ft high and 3,100 feet long on west side & 2,700 feet long on east side, from Cross Creek Rd to PCH. After decades, reconnects about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 3c:** Adds spillway removal to Alt 3a features	Same as 3a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 3d:** Adds spillway removal to Alt 3b features.	Similar to 2a, with allowance for controlled volume of natural sediment transport during winter storm seasons over 7-8 construction timeframe. Remove Rindge Dam arch while removing impounded sediment and notch height of arch by additional 5 ft each year to allow for storms to mobilize sediment. May allow for up to 130K CY to naturally transport downstream. Truck at least 520K CY of 780k CY of impounded sediment to Calabasas Landfill and remainder to shoreline / nearshore site(s) Floodwalls required for increased flood risk to Serra Retreat & City of Malibu: 5 ft high and 3,100 feet long on the west side & 2,700 feet long on east side, from Cross Creek Rd to PCH. Opens up about 5 mi of good to excellent aquatic habitat along Malibu Creek. **Alt 4c:** Adds spillway removal to Alt 4a features. 4a1, 4c1: shoreline placement 4a2, 4c2: nearshore placement	Same as 4a with the addition of modification or removal of upstream aquatic habitat barriers along Las Virgenes Creek (4) and Cold Creek (4), tripling the amount of good to excellent quality aquatic habitat reconnected to lower reaches of Malibu Creek. Opens up about 18 mi of aquatic habitat along Malibu, Las Virgenes and Cold Creeks. **Alt 4d:** Adds spillway removal to Alt 4b features. 4b1, 4d1: shoreline placement 4b2, 4d2: nearshore placement

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

January 17, 2018

Larry Simon
California Coastal Commission
45 Fremont Street
Suite 1900-2000
San Francisco, California 94105-2219

Dear Mr. Simon:

NOAA's National Marine Fisheries Service (NMFS) is pleased to support the Army Corps of Engineers' (Corps) Malibu Creek Ecosystem Restoration Project (Project). The Project involves the removal of Rindge Dam and a number of upstream fish-passage barriers on Malibu Creek for the purposes of restoring natural ecosystem processes and providing access to historical spawning and rearing habitats in the upper basin for endangered steelhead (*Oncorhynchus mykiss*).

Consultation between NMFS and the Corps on this Project is ongoing, for the purpose of addressing potential impacts of the Project on endangered steelhead and designated critical habitat for this species. At this time, a resolution of the impacts that is mutually acceptable to NMFS and the Corps is anticipated.

Malibu Creek is one of three "Core 1" watersheds within the Santa Monica Mountains Biogeographic Population Group identified in NMFS' Southern California Steelhead Recovery Plan[1]. Core 1 watersheds must be protected and restored if the federally endangered southern California steelhead are to be recovered. The removal or physical modification of Rindge Dam is an essential action to reinstate habitat connectivity and promote access of this species to its historic spawning and rearing habitats. Therefore, the Project is important for the recovery of endangered steelhead.

Overall, NMFS greatly appreciates the Corps' ongoing commitment to carry forward and ultimately complete the Project in a manner that protects endangered steelhead and designated critical habitat for this species. Please contact Jay Ogawa at (562) 980-4061 if you have a question concerning this letter or if you would like additional information.

Sincerely,

Anthony P. Spina
Chief, Southern California Branch, California Coastal Office

cc: Larry Smith, Army Corps of Engineers, L.A.
Administrative file: 151422WCR2018CC00008

Exhibit 11
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[1]www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/south_central_southern_california_coast/south_cental_southern_california_coast_recovery_plan_documents.html

Figure 3. Map depicting the approximate shoreline placement (green – NER) and nearshore placement (red – likely LPP) locations.

Exhibit 12
CD-0006-17

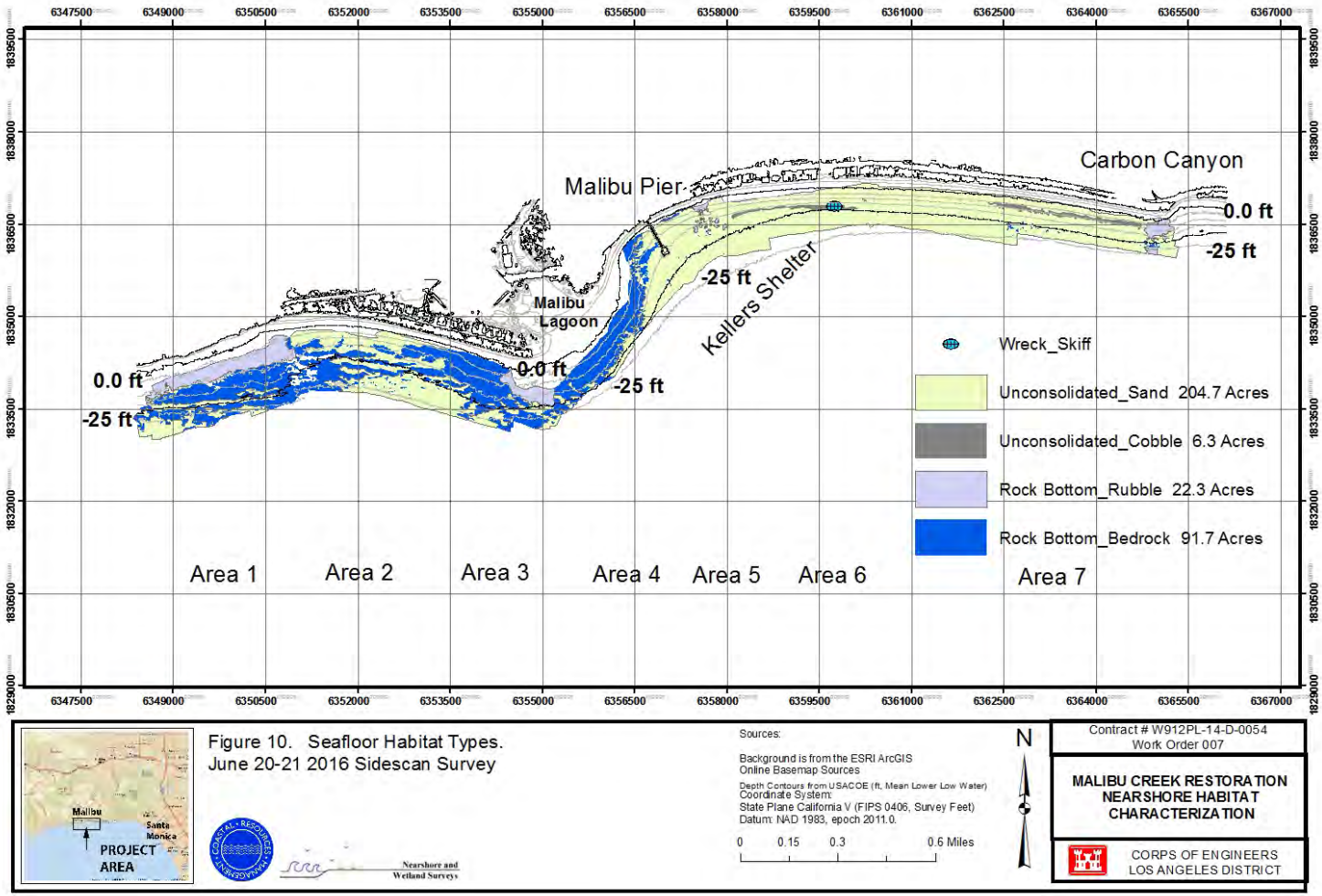

Figure 3.4-3 - Nearshore Seafloor Habitat Types (from USACE 2016)

Exhibit 13
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Figure 1.10-2 - Malibu Shoreline Nearshore Habitat Characterization

Exhibit 14
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Figure 2-1 Rindge Dam

Exhibit 15
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Exhibit 16
CD-0006-17

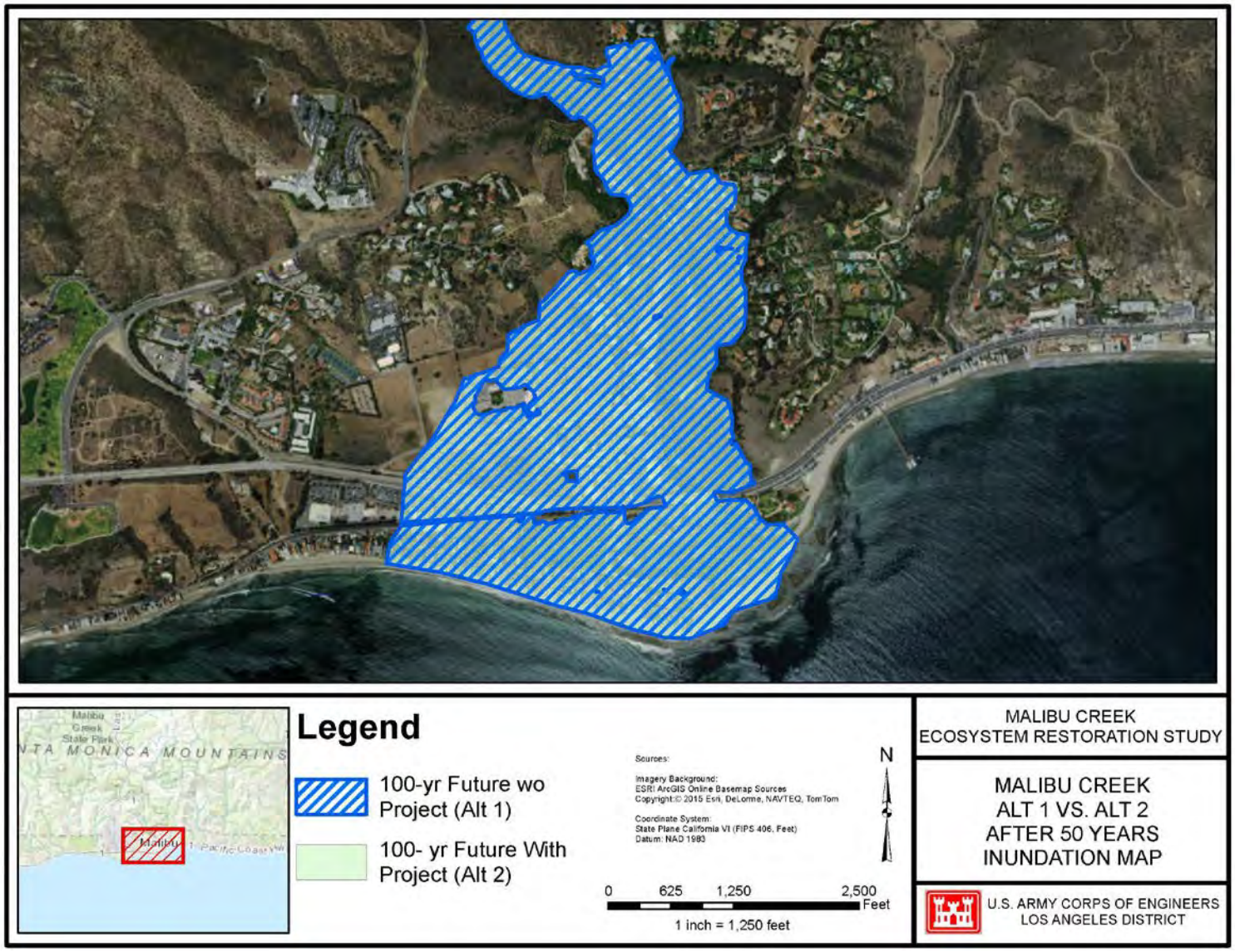

Plate 19.1-4 Malibu Creek Alt. 1 vs. Alt. 2 after 50 Years Inundation Map

Exhibit 17
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